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Training High Thinking Skills through Thematic Learning with Scientific Approach to Early Children In Taman Indria 4 Magelang

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Abstract

Education in Indonesia currently uses the 2013 curriculum with a scientific approach. The scientific approach is thought to be able to improve student learning achievement and can improve students' high-level thinking skills at every level. The formulation of the problem in this study is: How is the planning, implementation and evaluation of learning with the scientific approach carried out by Taman Indria 4 and What are the obstacles and teacher solutions in applying learning with the Scientific approach at Taman Indria 4. This study uses a qualitative approach through case studies. Data collection techniques using interviews, documentation and observation. The results of the study indicate that the application of learning with a scientific approach requires careful planning. Planning is done by participating in various training programs, seminars and training also makes Prota, Prosem, RPPM and RPPH according to the age of the child, the implementation of scientific learning uses a group model with safety activities. The inhibiting factors and solutions are: (1) limited space, utilizing class pages and the outside environment as a place of learning, (2) limited modules, utilizing internet services, (3) limited APE, utilizing used materials.

Keywords*: high level thinking skills, thematic learning, scientific approach.*

Background

Thinking is a very natural activity, every normal person can do it. No wonder [illegible], not just [illegible]ok entitled Revolution Thinking writes for the progress and welfare of the world in the future, needed by people who can think well. Personal life also requires good thinking skills, because the demands of life and opportunities in the future will be more complicated and require the ability to think that must even be better. (Edward de Bono, 2007: 20)

The ability to think needs to be developed from an early age, because at an early age is a golden age that is very influential on their next life. The ability to think of children is more than just cognitive abilities. Early childhood is a group of children aged

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0 - 8 years who are in the process of growth and development that are unique in nature. With patterns of growth and development (fine and rough motor coordination), intelligence (thinking power, creativity, emotional intelligence, and spiritual intelligence), social emotional (attitudes and behavior and religion), language and communication in accordance with the level of growth and development. Early childhood education is an effort to stimulate, guide, nurture, and provide learning activities that will produce children's abilities and skills.

According to Brookhart (2010: 3) high-level thinking skills are categorized into 3 parts, namely: (1) "define higher order thinking in terms of transfer". (2) "define it in terms of critical thinking". And (3) "deine it in terms of problem solving". In this case the definition of high-level thinking skills is categorized into 3 parts, namely (1) as a form of the results of the transfer of learning outcomes, (2) as a form of critical thinking, and (3) as a problem-solving process.

According to Conklin (2012: 14) also states the characteristics of high-level thinking "characteristics of higher order technical skills encompass both critical thinking and creative thinking". There are two characteristics that underlie high-level thinking skills, namely critical and creative thinking.

From some experts above, high-level thinking skills are a process of thinking skills in depth and broadness that involves processing information critically and creatively in dealing with and solving complex problems and involving the skills of analyzing, evaluating and creating. In the 21st century, learning is no longer seeing students as a target object to fulfill teaching obligations.

Learning targeted in the 21st century is learning that can stimulate students to be active, creative, critical and fun learners. So that students will be able to think at a high level and get learning scientifically and meaningfully. Education in Indonesia has undergone several curriculum changes, the most recent being the 2013 curriculum.

The 2013 curriculum is expected to be able to lead learning so that it can grow and train students in high-level thinking. The learning process uses the 2013 curriculum, at each level of education carried out integratively thematically. 2013 curriculum proclaims the existence of an approach, namely a scientific approach that requires students to learn critically, effectively and meaningfully. Scientific approach is a learning process designed to train students to be able to build their understanding actively and be able to understand various material so that students will think critically.

The scientific approach is a scientific approach, designed in such a way that students actively contract attitudes, knowledge, and skills competencies through the stages of observing, asking questions, gathering information, reasoning and communicating. Scientific approach is not interpreted as learning science but using scientific processes in learning activities. The scientific approach is thought to be able to train high-level thinking skills in early childhood. But the obstacles that have been obtained so far are very difficult how to practice high-level thinking skills in early childhood.

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Research Methodology

This study uses a qualitative approach through case studies. This research tends to be descriptive because the purpose is to describe and analyze data obtained in depth. In hopes of knowing in detail thematic learning with scientific approach. The subjects of this study were the Principal, 2 Teachers and 10 Guardians. The instruments in this study were interview guides and observation guides made by researchers. Data collection techniques using in-depth interviews, study documentation and observation and analyzed through data reduction, data presentation and making conclusions or verification. Checking the validity of the data is done through source triangulation and method triangulation.

Findings and Discussion

High-level thinking skills need to be trained not only in advanced students but must be trained early as in kindergarten. Therefore early childhood educators must have a breakthrough so that trained students think high. Referring to Bloom's revised Taxonomy there are 6 scientifically high-level thinking skills that are observing, reasoning, asking, analyzing, evaluating and creating. What is a high-level thinking skill is analyzing, evaluating and creating.

1. The Importance of Using a Scientific Approach
   a. Encourage Children to have Critical Thinking, Analytical, and Ability to Solve Problems
   b. Provide a more meaningful learning experience to children by encouraging children to observe activities, ask questions, gather information, reason, and communicate
   c. Encourage children to find out from various sources through observation and not only being told
2. Steps for Learning Implementation Using the Scientific Approach
   a. Observing is an activity that encourages students to show curiosity, sincerity, and accuracy when observing various objects (living / dead objects, story books, surroundings and images). Observing means using all the senses (vision, hearing, smell, touch and taste) to recognize an object being observed. The more senses used in the process of observation, the more information is received and processed in the child's brain.
   b. The question is one of the processes of finding out or confirming the knowledge that children already have with new knowledge that is being learned. In the activity of asking students are given the opportunity to ask about what has been seen, listened to, and read from concrete to abstract objects regarding facts, concepts, and procedures.
   c. Gathering information is a skill to collect various information from the results of observing & asking questions. The activity of gathering information is an activity of digging from various sources through various ways, for example: exploration

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of an object, experiment, and discussing and concluding the results. Gathering information is a process that children are very interested in. In this process the child tries-fails-try again "trial and error". Children love to repeat the same activities but with different ways of playing.

d. Reasoning is the activity of connecting information that has just been obtained with information that has been previously owned so as to get a full understanding.
e. Communicating is an activity to convey things that have been done in various forms, for example: pictures, works, stories. The process of communicating is the process of strengthening knowledge of new knowledge acquired by children. Communicating is not only conveyed through speech (verbally), it can also be conveyed through work (non-verbally). The habit of communicating and arguing will also give rise to positive characters in students, including responsible, polite, tolerant, courageous, and critical and ethical.

3. Learning Planning Conducted at Taman Indria 4 Using Thematic Learning with a Scientific Approach

Taman Indria 4 Kindergarten requires a long preparation to really feel able to apply Learning with a scientific approach. Very mature planning is needed in applying this approach. That is by reviewing the curriculum in accordance with the scientific approach concept, following various training, training and seminars, and making curriculum documents in the form of Determining Themes and Sub-Themes, PROSEM, RPPM carried out at the beginning of the school year prepared by managers, teachers and principals. Whereas RPPH is prepared by teachers every Saturday for 6 learning days. The implementation steps are carried out by the teacher also with the aim that the learning material can be received by the child well in accordance with the preparation of the activities that have been prepared

4. Implementation of Learning Conducted by Taman Indria 4 Using Thematic Learning with a Scientific Approach

Implementation of Learning in Taman Indria 4 Kindergarten uses a scientific approach, namely a learning method that learns from concrete to abstract and students as learning centers. This is in accordance with the constructivism theory which was sparked by Jean Piaget and Vigotsky that learning is the active process of students in constructing meaning, discourse, dialogue, physical experience. In the learning process there is a process of assimilation and connecting experiences or information that has been learned.

The learning model used in Taman Indria 4 Kindergarten is a group model with safety activities, which applies 4 different activities to each group and safety activities. In each scientific activity applied the scientific concept, Taman Indria 4 students were very enthusiastic in accepting learning and the improvement of their knowledge was very good compared to classical learning (previous learning). Because in scientific students are required 5M (observing, asking, reasoning, gathering information and communicating) can be well stimulated.

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The implementation of learning with a scientific approach does not have to use the manufacturer's APE. Educators must be able to utilize the surrounding materials to be used as meaningful learning media, this is in accordance with the results of research from Zaman, et al (2007), which states several principles that must be considered in the selection of infrastructure used as learning resources that the materials used can obtained from the environment around the school and cheap or can be made from used materials.

5. Evaluation of Lessons Learned by Taman Indria 4 Using Learning with the Scientific Approach

The evaluation carried out by Taman Indria 4 Kindergarten School Principals included the level of achievement of scientific learning programs, evaluation of materials and teaching materials, evaluation of teaching and learning activities carried out by evaluating teacher actions in classroom learning, teacher administration, and infrastructure for scientific learning. Teacher administration also includes the development and change of students in the learning process which will later be reported to parents.

Based on the results of the interview, the school principal carried out the KBM assessment by entering the classroom and observing the teaching and learning process. This monitoring material is recorded by the school principal and delivered at the monthly supervision meeting. The evaluation stages conducted at Taman Indria 4 Kindergarten are in accordance with what was stated by Arikunto and Safrudin (2009), which included several stages, namely evaluation preparation, evaluation phase and monitoring phase.

The purpose of this evaluation is to find out the current state of the school of scientific learning providers compared to the past, and also the suitability of the ideal goals expected by the education office. The results of the evaluation are useful for decision making, among others, to improve the program, improve activities / programs, stop an activity, or disseminate ideas that underlie scientific learning programs. The final results to be achieved in scientific learning evaluation are learning outcomes. From the results of observations on students' progress report books (report cards), it turns out that children can take lessons well.

6. Obstacles and Solutions Faced in Implementing Learning Using Learning with a Scientific Approach

The obstacles that arise in scientific application in Taman Indria 4 are: (1) limited space, (2) limited modules, (3) limited APE in door / out door and learning media. Limited space makes it difficult for educators to organize the environment. These difficulties have been overcome, among others, by utilizing existing places for the implementation of learning, such as the use of RW hall space, and free environment so that learning activities are designed not to require a permanent room.

Educators are the main component in the learning process, so efforts to improve the understanding of knowledge and experience of scientific educators continue to be carried out by providing opportunities for educators to take part in trainings or

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internships, and procure books as reference material. For APE, educators can use various used materials to be used as learning media.

Conclusion

Conclusions in this study are, in applying learning with a scientific approach, careful planning is needed. In the implementation of learning it is also necessary for educators who are creative in determining the variety of play and learning evaluation needed to determine whether the implementation of learning with a scientific approach is in accordance with the references of DITJEN PAUDNI.

Preparations made by Taman Indria 4 Kindergarten in applying learning with a scientific approach that is in accordance with the vision, mission and objectives of the institution have taken several considerations. Starting from comparative studies, participating in various trainings and seminars, and bringing educators who are already proficient in the implementation of scientific learning.

Making PROTA, PROSEM, RPPM and RPPH is also an important part in planning learning Taman Indria 4. The learning process with a scientific approach in Taman Indria 4 uses a group model with safety activities. In teaching learning always refers to 5 M (observing, asking, reasoning, gathering information and communicating).

Evaluation of learning in Taman Indria 4 kindergarten is in accordance with the guidelines for evaluating children's development progress. Evaluation or assessment is carried out with three techniques, namely check list, anecdotal notes and children's work. From the results of the evaluation, the educator then makes notes on the results of the development that have been achieved by the child, and is used as consideration in planning the next learning activity. The development aspects that are evaluated include: the development of moral and religious values, physical (gross and subtle motoric), language, cognitive, social emotional and art.

The obstacles and solutions faced by Taman Indria 4 Kindergarten in carrying out scientific learning are: (1) limited space. Responding to this problem, educators utilize the hall, out door or terrace space for theme-adjusted learning on that day, (2) the limited modules provided by the government regarding scientific learning. This requires educators to independently find sources of information from various media. Educators in Taman Indria 4 Kindergarten usually look for information on the internet that has been provided by the school, (3) limited APE indoor and learning media. APE indoor and learning media equipped with educators by utilizing used goods.

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